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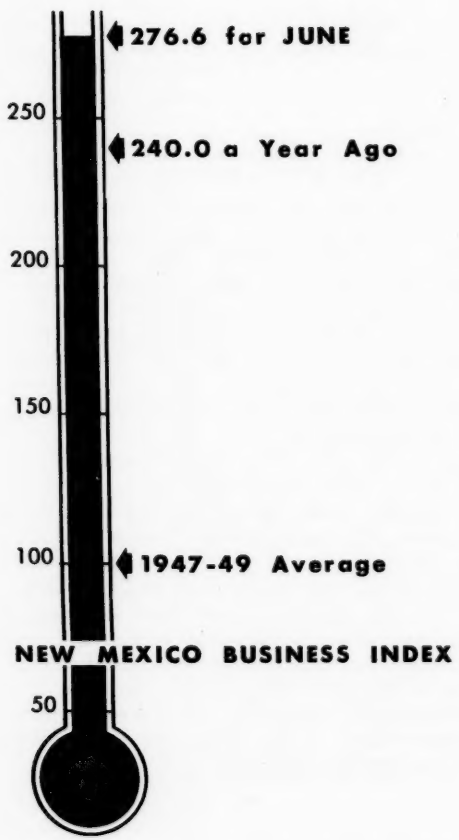


New Mexico business at mid-1958 was still surging ahead of the year before, although smaller month-to-month gains in some areas reflected the influence of the nation's recession. This gain in general business activity took place despite a minor decline in retail sales, which followed the usual seasonal pattern but was also reinforced by continued weakness in sales by apparel and furniture and appliance dealers and by a sluggish automobile market.

Also typically seasonal in pattern was June's poor showing at places of amusement and service establishments; however, these two consumer-oriented groups did manage good gains over June 1957.

Employment continued its steady growth, although at a somewhat smaller annual rate than that of several preceding years. The continued depressed condition of the State's metal mines, difficulties in the potash industry, and reduced exploration in oil and gas fields adversely affected employment in mining and utilities.

(Continued on Page 11)

Mining in New Mexico -- Industry with a Past and a Future

Mining in New Mexico

By Ralph L. Edgel

Mining has had a long history in New Mexico, antedating the coming of the Spanish Conquistadores, who received (or took) from the native Indians articles made of metals and turquoise, presumably mined in the area. Although the Spanish established an essentially agrarian economy, one of the principal incentives for colonization was the great mineral wealth supposed to exist in the area, giving rise to the name "Nuevo Mexico." Soon the importation of luxury items was being partially financed by the export of minerals.

With the mass intrusion of the "Gringos," lured here by the possibility of quick riches waiting in minerals and furs, mining achieved growing importance; and "fabulous" strikes of silver and gold produced mining rushes and boom towns comparable to those which occurred somewhat later in California and Colorado.

As a result of the unmistakable presence here of extensive mineral deposits and the fairly early discovery of them, mining eventually rivaled agriculture as the principal industry of New Mexico. Within the period for which recorded values are available, mineral production in the State first exceeded farm marketings in value in 1937; and, except for the years 1945-47, mining has continued to occupy first place in production value among all our industries. Table I traces the history of production of the principal segments of New Mexico's minerals industries since the turn of the century. The growth of mining and mineral production since the Second World War has been phenomenal, largely because of the rapid development of oil and gas, potash, and uranium resources.

The current importance of minerals activity to the State's economy is shown by such facts as these:

(1) Our minerals industries account for 6 per cent of all wage employment.
(2) They account for 9 per cent of total wages.
(3) They account for 24 per cent of the gross state product.

Activities of the minerals industries are dispersed widely throughout the State, primarily because of the diversity of resources. New Mexico mining embraces seven major segments, each of which is an industry in its own right. In order of relative importance during 1956 (see Table II), the seven are oil, natural gas (including natural gas liquids), potash, copper, uranium, lead-zinc, and coal. The latter, long one of New Mexico's leading industries, has declined in recent years until it is now outranked in value of production even by manganese, perlite, and molybdenum; but it is here accorded a place among the major segments because of its historical prominence and the possibility of a brighter future.

Because of the great diversity of the State's mineral industries, generalized discussion is difficult. Any review of our mining must deal with each important industry separately. The following sections, therefore, describe briefly each such segment, giving principal locations of activities, industry development, and outstanding characteristics.

COPPER MINING

Copper mining is apparently the oldest important mining activity in New Mexico, for there is evidence that the Indians sporadically worked the Santa Rita deposits long before the arrival of the Spanish. In 1807 Zebulon Pike reported a copper mine (probably the Santa Rita) which produced 20,000 mule-loads of metal annually. Until 1930, when the value of crude oil production surpassed that of copper, the red metal was by far our most important. In recent years New Mexico has ranked third to fifth among copper-producing states.

The bulk of New Mexico's copper (some 95 per cent) has so far come from the Central district in Grant county, with the principal producer being the Santa Rita mine, long a property of the Kennecott Copper Company. This district has typically accounted for 7 per cent of U. S. production. Hidalgo county mines have in recent years produced about 3 per cent of the State's total, and nine other counties have intermittently contributed minor accounts. (For a more complete discussion of copper in New Mexico see "Copper Chronicle" in the May and June 1958 issues of New Mexico Business.)

OTHER METALLICS

Although copper has been the mainstay of New Mexico mining since the turn of the century and until the rise of the petroleum industry, many other metallics have contributed largely to the

State's mineral output. The first authentic discovery and production of placer gold west of the Mississippi occurred in Santa Fe county in 1828 and was followed by other important discoveries there in 1837, and still others in 1859 in Grant county, in 1867 in Colfax county, and in later years in many other New Mexico areas.

Silver was discovered at Magdalena in Socorro county in 1863--a discovery soon followed by strikes in Catron, Colfax, Dona Ana, Grant, Hidalgo, Lincoln, Luna, Otero, San Miguel, Santa Fe, and Sierra counties. Principal producers of both gold and silver have been, in order, Catron, Grant, and Hidalgo. Colfax has ranked fourth in gold production, and Socorro fourth in silver.

Prior to 1905 the value of our gold and silver production far exceeded that of all other metallics combined; but the growing industrial demand for the baser metals brought increased output of other metallics like copper, lead, zinc, iron, and manganese. Since 1905 lead and zinc, most frequently obtained in combination with other metallics, have been the principal products (except copper) of New Mexico's metal mines. The six leading counties in the all-time production of lead and zinc are, in order, Grant, Socorro, Luna, Hidalgo, Dona Ana, and Santa Fe.

Molybdenum deposits near Questa in Taos county were developed following 1917. The property became the second largest of the nation's producers, holding this position until the copper companies began recovering "moly" as a by-product of copper ores. Since 1940 the major production of this metal has been that from the Central district of Grant.

Other metallics produced within this state in recent years include manganese, principally from Sierra and Socorro counties, vanadium from San Juan and McKinley, iron from Grant and Lincoln, beryllium from Taos, columbite from Rio Arriba and San Miguel, and insignificant quantities of tin from Catron and tungsten from Taos. Additional details may be found in Eugene Carter Anderson's excellent study The Metal Resources of New Mexico and Their Economic Features Through 1954, Bulletin 39 of the State Bureau of Mines and Mineral Resources.

URANIUM

The fair-haired child of the mining industry is, of course, uranium. In New Mexico this segment of mining has recently echoed the great "booms" of a century ago. In 1951 uranium meant little in

I: VALUE OF MINERAL PRODUCTION IN NEW MEXICO
1905 - 1957
(in 000s of dollars)

	Total	Copper	Lead-Zinc	Coal	Gold-Silver	Oil	Natural Gas; Natural Gas Liquids	Potash	Uranium	Others
1905	$ 4,842	$ 956	$ 964	$ 2,190	$ 543	$ ...	$ ...	$ ...	$ ...	$ 189
10	7,902	586	1,167	4,877	938	...	...	...	...	334
15	25,585	13,438	3,363	5,517	2,478	...	...	...	...	789
20	27,884	10,010	1,041	13,568	1,317	...	...	...	...	1,948
24	24,472	9,785	1,640	10,332	1,046	127	...	...	...	1,542
25	25,696	10,853	1,964	8,611	1,059	1,815	...	...	...	1,394
26	28,514	11,430	2,365	8,916	687	3,270	...	...	...	1,846
27	28,713	9,727	4,826	9,284	1,109	1,680	...	...	...	2,087
28	30,656	12,939	4,712	8,865	1,164	1,280	23	...	...	1,673
29	37,129	17,198	5,950	8,315	1,325	2,170	152	...	...	2,019
30	32,256	8,470	4,184	6,423	1,095	9,180	313	...	...	2,591
31	25,737	5,597	2,952	4,984	946	6,490	410	...	...	4,358
32	18,712	1,790	2,143	3,853	802	7,650	364	...	...	2,110
33	21,358	1,724	3,415	3,071	961	6,490	468	...	...	5,229
34	27,062	1,890	2,974	3,402	1,640	12,700	657	...	...	3,799
35	29,718	374	2,530	3,681	1,933	16,060	1,207	...	...	3,933
36	41,039	583	2,677	4,325	2,057	22,930	1,585	3,826*	...	3,056
37	65,870	7,757	3,879	4,973	2,403	36,600	2,207	4,469*	...	3,582
38	56,779	4,006	3,166	3,540	2,302	33,250	2,206	5,723*	...	2,586
39	62,126	9,598	3,560	3,461	2,245	30,850	2,588	5,724*	...	4,100
40	71,638	15,786	4,201	3,304	2,259	32,500	1,864	7,652*	...	4,072
41	87,517	17,341	6,211	3,788	1,920	37,200	3,344	14,085	...	3,628
42	94,848	19,384	9,258	5,249	900	31,550	3,602	19,631	...	5,274
43	111,142	19,802	13,715	6,610	525	38,900	4,752	21,919	...	4,919
44	112,180	18,827	12,728	6,604	623	39,500	5,004	24,740	...	4,154
45	104,234	15,274	10,586	5,637	527	37,610	6,511	25,456	...	2,633
46	111,991	16,262	9,877	5,350	413	44,540	5,797	27,187	...	2,565
47	157,548	25,286	12,511	6,522	577	72,440	9,255	28,036	...	2,921
48	220,080	32,414	13,780	6,947	606	117,520	15,727	29,177	...	3,909
49	200,668	21,823	8,748	7,070	459	116,250	15,175	27,950	...	3,193
50	210,355	27,581	9,431	3,917	425	115,100	17,346	31,944	61	4,550
51	256,313	35,602	18,556	4,502	540	129,160	25,083	37,210	9	5,651
52	295,118	36,838	19,185	4,858	537	144,940	31,674	52,483	44	4,559
53	338,096	41,602	3,847	4,068	277	185,260	39,056	58,076	529	5,381
54	377,282	35,729	244	1,471	222	205,760	52,497	64,367	3,019	13,973
55	440,592	49,547	4,740	1,236	294	227,310	70,311	69,058	4,681	13,415
56	504,048	63,193	11,490	971	471	241,706	82,743	72,802	15,349	15,323
1957	554,005	39,300	8,648	775	408	288,000	97,020	73,243	28,364	18,247

*Estimated

Source: U. S. Bureau of Mines and N. M. State Inspector of Mines

II: NEW MEXICO'S MINING INDUSTRY IN 1958

	Production(1)**	Value(1) (000s)	Employment(2) at mid-year
OIL AND GAS		$325,799	10,200
Crude oil (000s bbls)	87,893	241,706	--
Natural gas (million cu ft)	626,340	55,118	--
Natural gas liquids (000s gals)	614,813	27,625	--
Helium (shipments) (000s cu ft)	76,072	1,350	--
POTASH (K_2O equivalent)	1,931	72,802	1,900
COPPER (recoverable content)	74	63,193	2,000
URANIUM	(3)	15,349*	1,500
LEAD-ZINC (recoverable content)	41	11,490	600
COAL	153	971*	200
Other Metallics		3,633	600
Manganese and manganiferous ores	61	1,973	--
Molybdenum	857	1,040*	--
Silver (recoverable content) (troy oz)	392,967	356	--
Gold (recoverable content) (troy oz)	3,275	115	--
Vanadium (000s lbs)	191	67*	--
Iron ores	9	34*	--
Beryllium concentrate (tons)	31	37*	--
Selenium (lbs)	10,983	11*	--
Other Nonmetallics		10,141	300
Clay, stone, sand, gravel, scoria	7,362	7,143	--
Perlite (crude)	168	1,271	--
Pumice	292	667	--
Salt	57	501	--
Barite	4	81	--
Mica (scrap)	767	22	--
Mica (sheet) (lbs)	6,247	53	--
Lime	31	373	--
Gem stones	--	30	--
Not disclosed		670	
TOTAL		$504,048	17,300

*N. M. State Inspector of Mines
**In 000s of tons unless otherwise shown
(1) U.S. Bureau of Mines
(2) N.M. Employment Security Commission
(3) Not available

this state, aside from its international implications in the field of armaments. By the end of fiscal 1957, however, it had made the Cinderella story sound stodgy and old-hat.

In fiscal 1951 New Mexico production of crude uranium ore was valued at less than $9,000. Last year the output was worth more than $28 million (around 38 per cent of total U.S. production). employment rose close to 3,500 persons (1,650 engaged in actual production; 1,000 in mill construction; 800 in exploration), and reserves--those indicated and inferred--were estimated at 53,300,000 tons (68 per cent of the U.S. total).

Ambrosia Lake in McKinley and Valencia counties is the heart of the New Mexico--and perhaps the U.S. --uranium activity and reserves. In 1957 ore production in McKinley was valued at $3.3 million, and that in Valencia was estimated to be worth a great, big $24.9 million--a hike of more than 1,000 per cent in two years. Other 1957 production included Socorro county ore valued at $218,947, San Juan's valued at $13,886, and Santa Fe's valued at $1,126. Small amounts have come from Catron, Hidalgo, Rio Arriba, Sandoval, and San Miguel.

The two largest uranium mines in the nation are Anaconda's Jack Pile and Rio De Oro's Dysart Mine No. 1, both in the Ambrosia Lake area. By the end of 1958 six mills will be operating within the State: Kerr-McGee's 500-tpd installation at Shiprock, Anaconda's 3,000-tpd Bluewater plant, Homestake-New Mexico Partners' 750-tpd mill, the 1,500-tpd mill of Homestake-Sapin Partners, the 1,725-tpd plant of Phillips Petroleum, and Kermac's 3,300-tpd plant. All except the Shiprock mill are in the Grants area. The U.S. total of mills in operation and under construction or contract is around 25; so New Mexico's six form an important proportion of the total.

As Alvin J. Thompson, director of the New Mexico Bureau of Mines and Mineral Resources, sees it, if construction and production continue as planned, by 1959 or 1960 New Mexico will be turning out uranium concentrates with "an annual value of $100 million or more," and uranium will have become our most important metal.

Readers desiring additional data on uranium in New Mexico and the Southwest are referred to three articles in recent issues of New Mexico Business: "Expansion of Uranium Milling" in the May 1957 issue; and "Factors Affecting the Future of the Uranium Industry" and "Present Status of the Atomic Power Industry," both in the December 1957 issue.

COAL MINING

Coal mining in New Mexico may be as old as copper mining, but lack of early records about this unspectacular mineral makes impossible the verification of such a speculation. At any rate, during the early years of this century coal ranked second only to copper and in some years exceeded copper in value of output.

In the industry's heyday as many as 61 New Mexico coal mines produced more than 4 million tons of coal, most of it bituminous or subbituminous, and employed nearly 5,000 workers. Principal industry centers were, and still are, near Raton in Colfax county and near Gallup in McKinley county. Mines in these two areas have typically produced more than 90 per cent of total output, although mines in Santa Fe, Rio Arriba, Sandoval, San Juan, Bernalillo, and Lincoln counties have at one time or another made small contributions and have been important in supplying local needs.

The diesalization of railroads and the widespread use of natural gas have over the last 20 years seriously reduced the market for New Mexico coal, so that during 1957 only 30 operating mines, employing fewer than 200 men, were reported by the State Mine Inspector. Of the total 128,354 tons produced that year, 58 per cent came from the 12 Colfax county mines, 22 per cent from the seven in McKinley, and the remainder from the 11 operations scattered through Rio Arriba, Sandoval, San Juan, Santa Fe, and Socorro counties.

Some rejuvenation of the State's coal industry is in prospect as the result of rehabilitation and developmental work by Kaiser Steel at its recently acquired properties in Colfax. These activities promise to raise the State's production to 2.5 million tons per year.

POTASH

The United States owes its self-sufficiency in the matter of potassium oxide (K_2O) to New Mexico and New Mexico alone. The industry, begun in the early days of the Great Depression, saw its first small profits trickle in during 1932, but moved ahead so sturdily in subsequent years that it long ago grew into an eight-figure industry. In 1957 New Mexico's potash production was valued at $73.2 million.

Our pioneer potash company was the U. S. Potash Company, which shipped small amounts of crude salts in 1931. Today, seven firms operate in the Carlsbad basin--potash capital of the nation. The other six are the Potash Company of America organized in 1934; the International Minerals & Chemical Corporation, formed originally in 1936 as the Union Potash & Chemical Company, consisting of four prospecting companies--the Texas Potash Company, the Independent Potash & Chemical Company, the New Mexico Potash Company, and the Carlsbad Potash Company, and reorganized in 1956 into the IM&CC (see cover photograph); the Duval Sulphur & Potash Corporation, organized in 1950; the Southwest Potash Corporation, organized in 1952; the National Potash Company (Lea county's first), formed in 1956-57; and the Farm Chemical Development Corporation, the newest.

During 1957 more than 2 million tons of K_2O equivalent (out of some 13 million tons of ore) were shipped out of the New Mexico potash country, nearly 34 times as much as was sold the first year of production. In 1956, production totaled 1.9 million tons. The fertilizer industry buys 95 per cent of all domestic potash, and New Mexico produces 90 per cent of that. Reserves are extensive; investments run into the millions.

"Potash for Growth" (New Mexico Business, July 1955) traces the development of this important New Mexico industry in greater detail.

OTHER NONMETALLICS

In the following discussion of New Mexico's nonmetallics mining, all production figures and dollar valuations were taken from the annual reports of the State Inspector of Mines.

Perlite

Except for the sand-gravel category, perlite has for several years been our second most important nonmetallics mining product. It has recently enjoyed an upsurge in importance, because of the construction boom--both in buildings and in highways.

Perlite mining was begun hereabouts in 1949, with a total of 7,200 tons being mined that year with an estimated value of $21,500. By 1953 perlite mines were active in seven western states, but deposits in New Mexico and Nevada were furnishing 80 per cent of the total U. S. requirements.

III: PRODUCTION OF COAL MINES IN NEW MEXICO
By County, 1917, 1940, 1943, 1949*
(In tons)

	1917		1940		1943		1949**	
	Tons	Per Cent of Total	Tons	Per Cent of Total	Tons	Per Cent of Total	Tons	Per Cent of Total
TOTAL	4,113,544	100.0	1,069,000	100.0	1,814,872	100.0	1,353,876	100.0
Colfax	3,209,548	78.0	550,484	51.5	1,111,907	61.3	1,111,094	82.1
McKinley	689,283	16.8	367,141	34.3	552,112	30.4	163,709	12.1
Santa Fe	129,343	3.1	119,929	11.2	107,664	5.9	35,086	2.5
Rio Arriba	5,000	0.1	17,899	1.7	23,024	1.3	25,470	1.9
Sandoval	---	---	2,315	0.2	7,966	0.4	9,280	0.7
Socorro	74,479	1.8	7,009	0.7	6,400	0.4	4,911	0.4
San Juan	2,550	0.1	1,034	0.1	1,887	0.1	4,326	0.3
Bernalillo	---	---	3,189	0.3	3,912	0.2	---	---
Lincoln	3,341	0.1	---	---	---	---	---	---

* For 1943 and previous years, fiscal period ends October 31.
**Excludes production of 36,156 tons for 1949 which were reported for operations on Indian Land. Such operations were not reported to the State Inspector of Mines prior to 1948.

Source: Annual Reports of the State Inspector of Mines

Our three most important perlite counties are Socorro, Taos, and Valencia. In 1956 we turned out 163,331 tons worth $1.2 million, of which Socorro supplied 45,650 tons, Taos 57,784, and Valencia 59,897. The pattern was repeated in 1957: Socorro, 54,313 tons; Taos, 59,597 tons; Valencia, 68,064 tons.

The No Agua deposit (Taos county) of Great Lakes Carbon Company is reportedly the world's largest deposit of crude perlite. Until 1957 the operation there was a surface one, but last year underground mining was begun.

Mica

Mica mining in New Mexico increased its production 750 per cent in 1956; even so, the State contributed less than 1 per cent of the nation's total production.

The major deposits in New Mexico seem to be concentrated in eight districts: the Petaca in the east and the Cordova-Nambe in the southeast in Rio Arriba; the Ojo Caliente in the southwest and the Pueblo Creek-Penasco and Picuris Range districts in the south in Taos; the Elk Mountain in the northwest and the Ribera in the west in San Miguel; and the Mora in western Mora county. (See "New Mexico 'Isinglass'" in the November 1957 issue of New Mexico Business.)

Mica has been mined intermittently in New Mexico for decades, but for the last dozen years such activity has increased greatly. Several mica mills have been established or enlarged during the last three or four years: two in 1955 in the Petaca area (one with a design capacity of 300 tons of raw material daily); one in the Santa Fe area, recently expanded in capacity; others in Ojo Caliente in Rio Arriba county, on Pueblo creek in Taos, and at Pojoaque in Santa Fe county. The most recent mica establishment is the Los Compadres Mining Company of Ojo Caliente, which began operations in Taos county in February 1958.

Probably the best-known New Mexico mica operations have been--and are--those of the Petaca Mining Corporation in Rio Arriba. The mining and milling facilities there were taken over by Minerals Engineering Company early in 1957. In September of that year about 90 tons of ground mica were being produced there per day.

A new mill is planned for Cordova, and a finishing plant and a buying station will also go up somewhere in that general area.

In 1956 the State produced 762 tons of mica valued at $106,536. Of that output, by far the greater proportion came from Rio Arriba. In 1957 the production reached 1,648 tons, with 1,130 coming from Rio Arriba and 518 from San Miguel.

Fluorspar

Small amounts of fluorspar have been mined in New Mexico for more than 70 years, according to unrecorded reports claiming that the Foster mine near Gila in Grant county was operated in the 1880s. Recorded production dates from 1909.

For many years New Mexico ranked fourth in fluorspar production among all the states. In more recent years, she has ranked fifth--after Illinois, Kentucky, Utah, and Montana.

The southwestern region of the State is the oldest and most consistently productive fluorspar region and includes Grant, Luna, Catron, and Hidalgo counties.

For the first time since 1950, fluorspar operations ceased here in 1955, the mines being shut down because of too stiff competition from foreign imports. The year before, we produced 20,470 tons, valued at $689,660--with Grant county supplying 14,591 tons, Luna turning out 5,025, and Lincoln accounting for 854. Plans are currently moving toward the reopening of the fluorspar mill at Deming. Perhaps this action will bring rejuvenation to New Mexico's fluorspar mining.

IV: OIL PRODUCTION IN NEW MEXICO
1924 - 1957

	Oil Wells Completed	Producing Oil Wells	Average Production per well--per day (bbls)	Production (000s bbls)	Value at Wells Total (000s)	Value at Wells Average (per bbl)
1924-29	371	--	--	1,137	$ --	$ --
1931-35	484	430	--	15,893	--	--
1936-40	2,560	840	--	35,721	--	--
1941-45	1,204	3,320	--	37,383	--	--
1946	294	4,690	22.1	36,814	44,540	1.21
1947	423	5,000	23.1	40,926	72,440	1.77
1948	433	5,370	25.3	47,969	117,520	2.45
1949	334	5,580	23.8	47,645	116,250	2.44
1950	396	6,020	22.4	47,637	115,100	2.43
1951	350	6,350	23.4	52,719	129,160	2.45
1952	521	6,790	24.4	58,681	144,940	2.47
1953	575	7,320	26.4	70,441	185,260	2.63
1954	548	7,760	27.2	74,820	205,760	2.75
1955	859	8,640	27.5	82,958	227,310	2.74
1956	861	9,415	26.6	87,893	241,706	2.75
1957	1,098	10,820*	24.0*	94,759	290,735*	3.074*

*Preliminary

Source: U. S. Bureau of Mines, Monthly Petroleum Statement

V: DEVELOPMENT OF NATURAL GAS INDUSTRY IN NEW MEXICO
1940 - 1957

	Marketed Production (million cu ft)	Value at Wellhead ($000s)	Average Value at Wellhead (¢ per mcf)	Wells Drilled	Producing Wells
1940	63,900	985	1.5	19	100
1941	64,655	1,067	1.7	19	110
1942	78,164	1,204	1.5	15	120
1943	86,500	1,263	1.5	8	120
1944	87,727	1,333	1.5	9	130
1945	105,023	1,460	1.4	21	150
1946	119,262	1,694	1.4	42	170
1947	142,740	2,526	1.8	63	220
1948	194,749	5,258	2.7	44	230
1949	204,961	5,985	2.9	53	270
1950	212,909	6,387	3.0	88	360
1951	300,169	11,406	3.8	254	570
1952	359,377	16,414	4.6	319	920
1953	399,086	24,344	6.1	600	1,500
1954	449,346	35,049	7.8	392	1,800
1955	540,664	48,119	8.9	564	2,200
1956	626,340	55,118	na	na	3,472
1957	717,800	68,200	na	na	4,379

na Not available

Source: U.S. Bureau of Mines

Barite

Barite, which is widely used in drilling gas wells, comes chiefly in this state from Socorro county, with small amounts being mined intermittently in Torrance. In 1950 Dona Ana county produced the 300 tons representing the year's total output; but in 1956 Socorro accounted for 4,690 and Torrance for the other 50 tons New Mexico produced. Last year (1957) only Socorro mined any recorded amount--4,307 tons valued at $77,000.

Pumice, Scoria, and Gypsum

The market for these three nonmetallics has been greatly affected by the construction boom--as have the markets for sand and gravel, clay, and cement.

In the early 1940s the domestic production of pumice (including scoria), pumicite, and volcanic cinders suddenly began a rapid expansion, with 15 states and Hawaii engaging in the new mining ventures. Most of the time New Mexico has stood at the top in first or second place, California being the other big U. S. producer. Our pumice tonnage comes largely from Rio Arriba county, with Sandoval supplying the remainder. The 1957 production totaled 167,052 cubic yards, valued at $288,907. From Rio Arriba came 125,605 cubic yards; from Sandoval, 41,447.

Scoria is turned out by operations in Bernalillo, Dona Ana, Santa Fe, and Union counties. The 1957 production totaled 473,650 cubic yards, valued at $473,650. These amounts were mined in the scoria counties: 380,580 cubic yards in Union; 57,706 in Dona Ana; 22,140 in Santa Fe; and 13,214 in Bernalillo.

Helium

U. S. helium production is concentrated in Texas, New Mexico, and Kansas. It was discovered in this state in mid-1942 in the Rattlesnake gas field, and the federal government built its Navajo plant at Shiprock during the next year and a half. The plant has a capacity of 4 million cubic feet a month. However, it was operated only 19 days and then shut down to conserve the helium, since adequate supplies were on hand. In 1953 limited production was begun, again. In 1956 the output was 75,257 thousand cubic feet (a 40 per cent gain over the 1955 yield), valued at $1.3 million--an amount placing helium among the State's important minerals. In 1957 the value of output dropped slightly to $1.1 million.

Sand, Gravel, and Clay

Often taken for granted and rarely thought of as integral parts of the mining industry, sand and gravel and clay are important products of New Mexico mining. In 1955 sand and gravel ranked seventh in value among all mining products. In 1956 and '57 they ranked eighth. In 1957 crushed rock ballast ranked second in value among all our nonmetallics.

Most sand and gravel production comes from Bernalillo, De Baca, Grant, Lea, Santa Fe, and Valencia--the same six which turn out crushed rock ballast. The 479,760 cubic yards of sand and the 686,552 of gravel produced in 1957 were valued at an estimated $774,179 and $1.1 million respectively. We turned out 1.8 million cubic yards of ballast last year, worth around $1.5 million.

VI: CRUDE OIL AND NATURAL GAS PRODUCTION
New Mexico Counties, 1956 & 1957

County	Crude Oil (000s bbls) 1956	1957	Number of Producing Wells 1956	1957	Natural Gas (000s mcf) 1954	1957	Number of Producing Wells* 1956	1957
Lea	76,965	80,558	6,899	7,454	420,766	409,820	956	1,059
Eddy	4,484	5,764	2,129	2,364	8,083	9,720	25	27
Chaves	4,721	4,289	491	525	1,529	2,406	--	--
San Juan	624	1,591	138	379	177,099	261,199	2,062	2,490
Rio Arriba	308	306	21	30	18,156	45,224	429	803
Roosevelt	11	176	1	8	7	242	--	--
McKinley	132	129	48	49	0	0	--	--
Sandoval	16	18	9	11	5	8	--	--
State Total	87,261	92,831	9,736	10,820	625,645	728,619	3,472	4,379

*Includes prorated and nonprorated wells

Source: N. M. Oil Conservation Commission

Bernalillo, Dona Ana, and McKinley also produce brick and tile; and Dona Ana and Hidalgo produce fire clay. In 1957, 27,933 tons of brick and tile (value: $51,979) and 3,904 tons of fire clay (value: $14,268) were produced in New Mexico.

Caliche comes from Curry and Lea, last year's output totaling 53,338 cubic yards with a value of $26,669. And Chaves and McKinley yielded 2,108 tons of drilling mud with an estimated value of $8,472.

Others

Small amounts of several other minerals are mined in New Mexico, though somewhat sporadically: beryl in Socorro, Torrance, and Taos; dolomite in Grant; salt in Grant, Eddy, and Catron; elemental sulphur in Grant; lepidolite in Taos.

Interest has been recently aroused in Sandoval deposits of gypsum, where a projected new gypsum operation may develop. The State's first cement plant is currently under construction near Albuquerque.

In the matter of sulphur, the U. S. Bureau of Mines has designated New Mexico as one of the five western states believed to be potentially important as sulphur producers. In this state sulphur is found in the oil and gas fields and in the base-metal ores, especially those in Grant county.

PETROLEUM

Much of the growth of New Mexico's mineral production in recent years has been attributable to the rapid development of its petroleum industry. Although official Territorial reports contain glowing accounts of promising indications of oil and enumerate frequent exploratory activities for earlier dates, the first authenticated production of oil was that from the Dayton pool in Eddy county in 1909. The first so-called commercial producing oil well was completed in 1922 in the Hogback field of San Juan county. Although the U. S. Bureau of Mines began reporting oil production from New Mexico in 1924, the bulk of which came from San Juan county, not until the Hobbs pool in Lea county came into production in 1929-30 did the State begin to move toward prominence as an oil state. The subsequent rapid development of the industry is traced in Table III.

With the opening of the Hobbs pool and the subsequent development of the area, Lea county moved into the lead in petroleum production in New Mexico. Rapid exploration throughout the State followed, with major fields being developed in Eddy and Chaves counties in the southeast and in San Juan and McKinley counties in the northwest. More recently, new fields have been opened up in Rio Arriba, Roosevelt, and Sandoval counties. The geographical distribution of oil-producing operations is shown in Table IV.

NATURAL GAS AND RELATED PRODUCTS

Although natural gas is frequently a by-product of the exploration for and the production of petroleum and was at one time practically worthless in this region because of a lack of markets and/or marketing facilities, it has now become a separate and an important industry. Early discoveries and minor production of gas in New Mexico occurred in 1908 in Eddy county and in 1920 in San Juan county. Throughout the Twenties widespread exploration for oil produced many additional discoveries, both in association with oil and in dry-gas wells, so that by the early Thirties New Mexico was established as an important gas producer.

Natural gas production occurs largely in two distinct areas--the Permian basin in southeastern New Mexico (Chaves, Eddy, and Lea counties), where the bulk of production is in association with oil, and the San Juan basin of northwestern New Mexico (San Juan, Rio Arriba, Sandoval, McKinley, and Valencia counties), where most production comes from natural gas wells.

The development of the industry has generally followed the pattern of that of the petroleum industry. The surge of gas production during the Thirties and early Forties was largely due to the extensive development of the Permian oil fields, which still produce two thirds of the State's output. Following the Second World War, a burgeoning demand for natural gas led to an intensive search for and development of gas wells, with the greatest development taking place in the San Juan basin.

Associated with natural gas as it comes from the wells are other hydrocarbons, inert gases, and impurities in varying amounts which may be commercially produced either as by-products or as principal products of the respective fields. Thus, the natural gas industry of New Mexico produces, at plants in both basins, by-products including natural gasoline, liquified petroleum gases (butane and propane), and sulphur. A considerable quantity of Permian natural gas is consumed to produce carbon black at some half-dozen Permian plants. Helium is produced in a government-owned plant from gas of the Rattlesnake field (see above), and carbon dioxide comes from some gas fields in northeastern New Mexico.

Table V sets forth the current natural-gas picture within the State, adding details not included in Table I. Readers are referred to two Bureau publications for additional data on New Mexico oil and gas: Natural Gas in New Mexico, No. 3 in the series "Studies in Business and Economics"; and "Oil and Gas, Two Three-Letter Words for 'Success' in the San Juan Basin," New Mexico Business, September 1957.

Greatly blessed with a wide variety of extensive deposits of important minerals, New Mexicans have long looked upon their land as a splendid chunk of the Good Earth. The future is not likely to alter that attitude.

VII: VALUE OF MINE PRODUCTION BY COUNTIES--1957
(in 000s of dollars)

	Oil	Gas	Potash	Copper	Uranium	Lead	Zinc	Coal	Manganese	Others		Total Value
NEW MEXICO	285,362.2	69,218.7	60,795.0	48,642.4	28,364.4	2,205.1	13,772.1	775.4	2,714.0	2,979.3		514,828.6
Bernalillo										Scoria:	17.6	17.6
Catron										Salt:	20.4	20.4
Chaves	13,185.0	228.5										13,413.5
Colfax								454.8				454.8
Dona Ana										Scoria:	86.6	86.6
Eddy	17,719.5	923.4	60,000.0							Salt:	39.7	78,682.6
Grant				46,570.9		1,905.0	13,575.3		22.6	Iron Manganese:	148.2	
										Molybdenum:	948.6	
										Gold:	64.2	
										Silver:	178.8	
										Selenium:	1.8	63,415.4
Guadalupe				360.4								360.4
Hidalgo				1,478.9					19.8	Gold:	13.6	
										Silver:	36.0	1,548.3
Lea	247,634.7	38,932.9	795.0									287,362.6
Lincoln										Bastnasite:	5.5	
										Iron:	16.8	22.3
Luna									449.2			449.2
McKinley	396.9				3,271.5			158.5		Vanadium:	49.4	3,876.3
Rio Arriba	940.3	4,296.2		192.4				87.2		Mica:	100.9	
										Pumice:	240.1	5,857.1
Roosevelt	541.0	23.0										564.0
Sandoval	54.7	0.8			0.1			12.0	7.3	Pumice:	48.8	123.7
San Juan	4,890.1	24,813.9			13.9			2.1		Vanadium:	6.8	29,726.8
San Miguel					0.5					Mica:	6.2	6.7
Santa Fe				10.6	1.1	2.8	3.8	56.3		Scoria:	11.1	
										Gold:	1.3	
										Silver:	0.5	87.5
Sierra				0.7		2.6	1.3			Silver:	0.8	5.4
Socorro				16.3	218.9	294.7	191.7	4.5	1,117.3	Iron:	3.4	
										Vanadium:	0.8	
										Silver:	15.1	
										Barite:	77.0	
										Perlite:	201.9	2,137.1
Taos				11.9						Beryl:	16.0	
										Molybdenum:	10.2	42.6
Union				0.3						Scoria:	191.2	191.5
Valencia					24,858.4					Perlite:	420.0	25,278.4
Not allocated									1,097.8			1,097.8

Sources: Oil and gas data are calendar-year figures from U.S. Bureau of Mines, Monthly Petroleum Statement. All other data are fiscal-year figures from the annual reports of the State Inspector of Mines.

Business Activity in New Mexico

	June 1958	Year Earlier June 1957	Per Cent Change June 1958 from May 1958	Per Cent Change June 1958 from June 1957	INDEX June 1958 (Average Month 1947-49 = 100)
Index of Business Activity (1947-49 = 100)	276.6	240.0	+ 0.4	+ 13.4	276.6
*Sales of Retail Stores (1,000s)	$104,040	$110,358	- 3.3	- 5.7	211.5
Apparel Stores	2,791	2,890	- 7.1	- 3.4	140.9
Automotive Dealers	28,819	31,615	+ 3.7	- 8.8	215.6
Subsistence Stores	24,702	22,511	+ 4.8	+ 9.7	214.3
Furniture and Appliance Stores	3,836	4,200	+ 2.5	- 8.7	150.8
Building Materials Dealers	9,843	8,268	- 6.1	+ 19.0	202.0
Other Retail Stores	34,049	40,874	- 12.8	- 16.7	232.7
*Sales of Amusement Establishments (1,000s)	$ 1,636	$ 1,285	- 22.5	+ 27.4	183.7
*Sales of Service Establishments (1,000s)	12,084	11,555	+ 0.6	+ 4.6	312.5
*Sales of Contractors (1,000s)	35,374	25,946	+ 2.2	+ 36.3	517.6
*Sales of Wholesalers (1,000s)	36,322	32,443	+ 5.8	+ 12.0	179.8
*Public Utilities and Carriers' Sales (1,000s)	14,994	15,190	+ 1.2	- 1.3	320.4
*Life Insurance Sales (1,000s)	20,436	18,694	- 4.6	+ 9.3	582.7
*Bank Debits, 36 banks (1,000s)	$430,699	$367,056	+ 8.1	+ 17.3	265.0[a]
Bank Loans and Discounts, 36 banks (1,000s)	42,220	35,389	+ 4.9	+ 19.3	246.4[a]
Demand Deposits, 36 banks (1,000s)	313,793	291,522	+ 2.6	+ 7.6	165.6[a]
Time Deposits, 36 banks (1,000s)	107,891	94,595	+ 0.4	+ 14.1	301.3[a]
Business Failure Liabilities (1,000s)[b]	98	280	+136.7	- 64.9	343.2
Wage Workers in Nonagricultural Establishments	218,700	212,000	+ 0.6	+ 3.2	166.0
*in Manufacturing	22,500	21,300	+ 0.9	+ 5.6	226.9
in Mining	15,300	18,100	+ 1.3	- 15.5	132.8
in Transportation and Utilities	19,500	20,100	+ 0.5	- 3.0	129.9
in Trade	48,400	47,100	+ 1.0	+ 2.8	162.9
in Finance, Insurance, and Real Estate	8,600	7,200	+ 3.6	+ 19.4	293.0
in Services and Miscellaneous	28,100	26,900	+ 1.4	+ 4.5	130.9
in Government	55,300	53,600	- 2.0	+ 3.2	193.8
in Contract Construction	21,000	17,700	+ 3.4	+ 18.6	166.2
Number of Insured Unemployed	4,812	2,662	- 18.6	+ 80.8	--
Rate of Unemployment (per cent of labor force)	2.71	1.57	- 19.3	+ 72.6	174.5
*Building Permits, total 16 cities (1,000s)	$ 8,141	$ 5,916	- 24.5	+ 37.6	323.0[a]
Residential	5,902	3,642	- 12.0	+ 62.0	378.6[a]
Nonresidential	1,512	1,018	- 51.3	+ 48.5	222.9[a]
Other	727	1,256	- 25.6	- 42.1	257.0[a]
*Petroleum Production (1,000s of bbls)	7,880	7,443	- 4.0	+ 5.9	207.8
Natural Gas Production (millions of cu ft)	54,078	51,255	- 7.7	+ 5.5	336.2
*Electric Power Production (1,000s of kwhs)	257,442	220,591	+ 5.7	+ 16.7	291.7
*Index of Total Metallics Production (1947-49 = 100)	28.7	110.6	- 41.9	- 74.1	28.7
Mine Production - Copper (1,000s of lbs)	4,800	12,412	- 41.9	- 61.3	45.4
Mine Production - Lead (1,000s of lbs)	200	1,140	- 4.8	- 82.5	19.3
Mine Production - Zinc (1,000s of lbs)	na	6,494	--	--	--
*Mine Production - Potash (1,000s of tons)	914	908	- 19.3	+ 0.7	228.3
Index of All Farm Prices (1947-49 = 100)	101.0	91.4	- 4.3	+ 10.5	101.0
Index of Livestock Prices	109.7	90.3	- 4.7	+ 21.5	109.7
Index of Crop Prices	86.5	101.2	- 3.1	- 14.5	86.5
Receipts from All Farm Marketings (1,000s)	$ 8,051	$ 7,030	- 27.7	+ 14.5	52.2
Livestock and Products	5,290	5,036	- 32.2	+ 5.0	57.3
Crops	2,761	1,994	- 17.0	+ 38.5	44.7

	July 1958	Year Earlier July 1957	Per Cent Change July 1958 from June 1958	Per Cent Change July 1958 from July 1957	INDEX July 1958 (Average Month 1947-49 = 100)
Bank Debits, 36 banks (1,000s)	$451,609	$402,633	+ 4.9	+ 12.2	278.0[a]
Bank Loans and Discounts, 36 banks (1,000s)	44,112	37,217	+ 4.5	+ 18.5	257.5[a]
Demand Deposits, 36 banks (1,000s)	324,805	292,933	+ 3.5	+ 10.9	171.4[a]
Time Deposits, 36 banks (1,000s)	108,338	101,588	+ 0.4	+ 6.6	302.5[a]
Wage Workers in Nonagricultural Establishments	219,100	211,600	+ 0.2	+ 3.5	166.3
Number of Insured Unemployed	4,668	2,657	- 3.0	+ 75.7	--
Rate of Unemployment (per cent of labor force)	2.62	1.55	- 3.3	+ 69.0	168.4
Building Permits, total 16 cities (1,000s)	$ 9,938	$ 5,677	+ 22.1	+ 75.0	394.3[a]
Residential	6,364	4,108	+ 7.8	+ 58.4	408.2[a]
Nonresidential	2,967	1,075	+ 96.3	+175.8	437.4[a]
Other	607	584	- 16.5	+ 4.0	214.5[a]
Index of All Farm Prices (1947-49 = 100)	102.8	92.8	+ 1.8	+ 10.8	102.8
Index of Livestock Prices	112.1	93.6	+ 2.2	+ 19.8	112.1
Index of Crop Prices	86.5	98.4	0.0	- 12.1	86.5

*Indexes for these items are used to compute the Index of Business Activity.

[a]Although the number of reporting units changes, the indexes for these items are comparable with indexes for preceding months.

[b]The figures in this series are based on the average of three months' data.

na - not available

Sources:

Retail Sales data: N. M. Bureau of Revenue
Potash Production: N. M. Bureau of Revenue
Petroleum and Natural Gas Production: N. M. Oil Conservation Commission
Life Insurance Sales (New Ordinary): Life Insurance Agency Management Association
Wage Workers and Unemployment: N. M. Employment Security Commission and U. S. Department of Labor
Electric Power Production: Federal Power Commission
Metallics Production: U. S. Bureau of Mines
Farm Prices and Marketings: U. S. Agricultural Marketing Service
Bank data (all series), Building Permits: Bureau of Business Research
Business Failure Liabilities: Dun & Bradstreet, Inc.

Monthly Summary (Continued from Page 1)

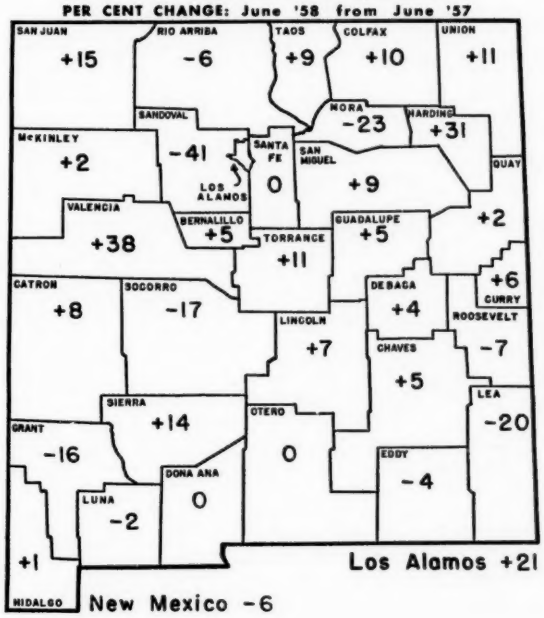
Even though the growth of employment seemed slowing somewhat, the unemployment situation showed signs of improvement. In spite of the fact that unemployment in June was substantially higher than in the preceding June, it has been dropping steadily since March and well may be headed for the extreme lows characteristic of 1956 and 1957.

The single most stimulating influence operating within the State's economy at mid-year (as was true earlier in 1958) appeared to be the rapid expansion of construction activity. Construction contractors were making sales more than one third greater in value than those a year before and were employing nearly one fifth more workers. Moreover, the continuing rise in building permits indicated that construction activity will probably continue at a high level for some time.

Other signs and portents suggesting that the state of business in June was generally healthy included substantial gains in wholesale sales, manufacturing employment, electric power production, and bank debits and loans.

RETAIL SALES: A Comparison

PER CENT CHANGE: June '58 from June '57



Sales Activity in New Mexico Counties

June 1958

(add 1,000s)	Retail Stores							Others		
County	Apparel	Automotive	Subsistence	Furniture & Appliances	Building Material	Other	Total	Amusement Places	Service Firms	Wholesale Sales
Bernalillo	$1,241	$ 8,642	$ 6,794	$1,646	$4,220	$ 9,830	$ 32,373	$ 566	$ 4,229	$16,632
Catron	0	45	47	0	9	56	157	5	1	29
Chaves	185	1,745	1,518	192	703	1,762	6,105	147	662	2,119
Colfax	42	480	477	21	118	518	1,656	17	104	295
Curry	129	1,081	749	154	321	832	3,266	71	586	789
De Baca	(a)	70	73	4	25	174	346	(a)	18	31
Dona Ana	82	1,350	1,104	114	519	1,033	4,202	66	541	977
Eddy	174	1,297	1,441	209	366	2,257	5,744	93	567	765
Grant	28	473	457	63	138	451	1,610	18	142	350
Guadalupe	0	327	262	(a)	24	152	765	1	7	150
Harding	0	61	8	0	1	87	157	2	1	12
Hidalgo	10	260	155	1	27	142	595	3	26	125
Lea	181	1,743	1,144	279	376	3,000	6,723	102	719	1,468
Lincoln	6	160	359	17	103	220	865	13	37	112
Los Alamos	20	176	334	6	13	163	712	29	92	19
Luna	31	477	275	44	43	319	1,189	16	99	420
McKinley	61	992	967	68	166	985	3,239	51	201	1,453
Mora	2	27	17	(a)	(a)	72	118	2	3	22
Otero	85	808	925	161	339	716	3,034	64	243	376
Quay	41	629	438	36	66	423	1,633	22	88	476
Rio Arriba	11	513	278	30	50	453	1,335	3	68	134
Roosevelt	42	385	299	31	127	357	1,241	22	168	247
Sandoval	1	62	65	0	6	164	298	0	14	21
San Juan	102	2,442	1,423	172	1,046	3,077	8,262	120	663	1,560
San Miguel	15	401	361	19	111	561	1,468	19	105	477
Santa Fe	187	1,153	1,339	190	309	1,633	4,811	72	663	1,568
Sierra	2	226	228	28	33	121	638	15	68	45
Socorro	9	248	228	8	44	188	725	(a)	36	142
Taos	15	269	273	59	22	311	949	6	51	172
Torrance	2	273	197	5	50	171	698	(a)	18	54
Union	20	164	146	4	51	176	561	6	39	49
Valencia	37	1,013	847	8	159	962	3,026	49	154	229
Unallocated	30	827	1,474	267	258	2,683	5,539	36	1,671	5,004
Total	$2,791	$28,819	$24,702	$3,836	$9,843	$34,049	$104,040	$1,636	$12,084	$36,322

(a) Less than $1,000
Source: School Tax Division, N. M. Bureau of Revenue

CHART-OF-THE-MONTH

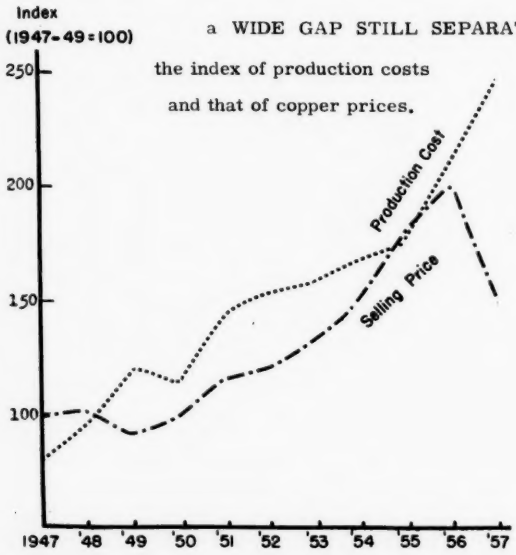
DESPITE A SLIGHT UPTURN IN COPPER PRICES

since these indexes were charted last November,

a WIDE GAP STILL SEPARATES

the index of production costs

and that of copper prices.



Source: Chinorama, November, 1957, p.1

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